DIVIDENDS FROM BARBERRY ERADICATION

A radio interview conducted with Mr. F. C. Meier, Bureau of Plant Industry, by Norse Salisbury, and broadcast July 21, in the Department of Agriculture period, National Farm and Home Hour, through a network of 43 NBC associate stations.

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SALISBURY:

In recent weeks we have been acquainting ourselves with some of the animal health campaigns now proceeding in the United States under the direction of the Federal Department of Agriculture. The Federal Government takes a hand also in helping State and local governments and individual farmers to defeat the forces of plant disease.

Today we are going to review the progress in one of the most extensive crop disease control campaigns the United States Department of Agriculture ever has undertaken.

Yesterday, Dr. Ramsay, of the Bureau of Animal Industry, told you how science has successfully attacked tick fever of cattle by destroying the "intermediate host" of that disease -- the cattle tick.

Much the same sort of method has been developed by science to control the destructive stem rust of grain in the North Central States. This disease has to live through an intermediate stage on the common barberry. If we destroy cattle ticks, we destroy tick fever; similarly, if we destroy barberry bushes, we destroy stem rust of spring grains in the North central States.

So farmers and public officers in these States set out 13 years ago - following the terrible rust epidemic of 1916 -- to control stem rust by eradicating the common barberry. This compaign is under the direction of Dr. F. C. Meier, Plant Pathologist, who has often talked with us in Farm and Home Hour programs. I've asked him today to tell us the present status of the campaign********* How many bushes were destroyed last year, Mr. Meier?

MEIER:

Hold on, now. That isn't a fair measure of the progress of the drive against the barberry and stem rust. You must remember that we have been destroying barberry bushes for 13 years. Each year, naturally, the kill gets smaller. Each year, by the way, the losses from stem rust decrease. That's the true measure of the success of the campaign. In future years, we hope that we can measure success not in the number of bushes destroyed by hired scouts, but in the number destroyed by farmers and townsfolk who join the war against the disease. You see, we are proceeding in three ways. One in scouting out the bushes and eradicating them. Another is informing the public about the menace of the bushes,

and getting the help of individuals in reporting and destroying them. The third is investigating the biology of the rust so as to discover any weak points in our campaign and remedy them.

SALISBURY:

I'm properly corrected, Mr. Meier, Now, tell us what you accomplished last year in the way of eradicating bushes, and to what point those results bring the total "kill" in the campaign.

MEIER:

Well, from 1918 through 1930 there were destroyed 18,312,783 bushes, sprouts and seedlings. Last year the tally was 168,000 bushes. Since we have rooted out or killed by chemical most of the heavy concentrated growths, that means that most of these were singles. And it shows that many scattered bushes must be eradicated before the campaign is completed.

SALISBURY:

But is it necessary to hunt out every last single bush?

MEIER:

Of course a large number of bushes are more likely to cause trouble than a single bush. With this in mind, we are cleaning out large areas of bushes in grain sections first. Every bush is, however, a tremendous potential menace to small grain crops in its vicinity. I remember one striking example of the damage one bush can do. In 1922, the eradication men found a large 60-year-old barberry bush near Alert, in Decatur County, Indiana. It had already spread rust to the grain fields of the community. More than 50 acres of wheat in the immediate vicinity of the bush were not even cut, and the grain from more than 200 acres in more distant fields was so badly shriveled that it was not salable after being threshed. A prospective yield of 22 bushels per acre.over an area of about 50 square miles was reduced to 8.8 bushels per acre. At prices of wheat then, the loss figured $50,000. But our men destroyed that bush in 1922. Every year since they have made observations. They have found no serious stem rust losses in the community since the offending barberry was killed. Then, of course, every bush is not only a potential source of rust but of barberry seeds which the birds may spread to fence rows and other uncultivated land.

SALISBURY:

Well, we all know that stem rust losses have gone steadily downward in the past 13 years or so. It's certainly different from the pioneer days in the newer spring wheat country. The rust with its load of despair to farmers was too much a feature of pioneer life, There certainly is a striking coincidence between the grogress of barberry eradication and decline of rust losses. I suppose you link them together, Mr. Meier******

MEIER:

Of course. And with absolute scientific justification. WITHOUT THE BARBERRY BLACK STEM RUST CANNOT ORDINARILY CARRY THROUGH THE WINTER IN THE NORTH CENTRAL STATES!

SALISBURY:

Do you have the figures on declines in rust losses?

MEIER:

Right here on this chart are the figures and a graphic representation that will help you realize the reduction. (Rustle of paper)

SALISBURY:

Well, unfortunately we can't scan this chart and send it to the Farm and Home folks' televisors yet,- Folks, the chart shows an average annual loss of 57 million bushels of wheat in the period 1916-1920, about 4 and a quarter million barberries destroyed in those years. then the loss drops to an average of about 18 million bushels a year in the period 1921-25, while the number of barberries destroyed mounts to 12 and one-half million; and the loss again drops to an average of slightly less than 10 million bushels as barberries eradicated go up to over 18 million at the close of the five year period just concluded.

But, Mr. Meier, weren't weather conditions in recent years unfavorable for such big epidemics of stem rust as occurred in the black year of 1916?

MEIER:

Last year the weather certainly didn't encourage rust or any other disease that needs moisture for its development. But you're forgetting the warm, wet years of 1920, 1923 and 1927. Weather conditions then were very favorable for rust, but serious epidemics did not take place in any of these years.

SALISBURY:

Now you spoke, Mr. Meier, of a second phase of the anti-barberry campaign -- the information of the public so that individuals will cooperate in the drive. What are the results from this end of the work?

MEIER:

Well, the actual participation of property owners, cooperating agencies, and school children in the eradication work has increased many-fold during the past four or five years. For example, the number of locations of common barberry bushes reported by children who have studied stem rust control methods in the public schools have, during the past two years, exceeded the total number reported during the other combined 11 years of the campaign.

And let me emphasize to you, Mr. Salisbury, and Farm and Home folks, that the informational work of the campaign will bear fruit in the next few years. It will be the lever that will finish the job of heaving the barberry bush out of the North Central States. In some parts of the spring wheat area, the remaining barberries are few and scattered. While these bushes remain they will be a source of rust and will produce seeds which will be scattered by birds to grow new sources of rust. It's up to the cooperating public, for the most part, to locate and report these scattered bushes to us. Farm and business organizations are awake to this need, and are urging members to help the campaign. This past year the Indiana Farm Bureau took active interest in the work; at its 1931 convention the Illinois Farmers' Institute adopted a resolution commending the Federal Department and the Illinois State Department for their work in barberry eradication. So it goes.

SALISBURY:

Well, our time's short, won't you say a word about the third phase of the barberry eradication work -- the research?

MEIER:

It will take more than a word to indicate its importance, However, let's take just one discovery and note its effect. Our plant pathologists have discovered that new rust resistant varieties of grain may not offer complete immunity to the disease if barberry bushes are near. Why? Because two different forms of rust may cross breed on susceptible barberry leaves. Then you may get a third, entirely new strain of rust, against which your new variety of grain may not be immune.

SALISBURY:

A neat little game of chess between Mother Nature (in her diabolical moments) as plant breeder and man as plant . . . . breeder: But I can see that the discovery increases the necessity for complete eradication if the rust control program is to be effective. An interesting report you have given us, Meier. Any parting word to the folks in the barberry States?

MEIER:

Why, yes, thank you. I'm talking now to the folks in the States of Colorado, Illinois, Indiana, Iowa, Michigan, Minnesota, Montana, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin and Wyoming. These states constitute the barberry eradication area. I'm appealing to you folks in these States to take a hand in hunting down, reporting to your State Agricultural College and thus helping to destroy the outlaw plants of the common barberry. You'll be performing an act of good citizenship by so doing. If you want further information about the reasons for the campaign, send for Farmers' Bulletin 1544, "The Common Barberry sad Black Sten Rust."